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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/757,732	01/09/2001	SangKyoony Hyun	062891.0607	7769

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EXAMINER

MACE, BRAD THOMAS

ART UNIT	PAPER NUMBER
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2663

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/757,732

Applicant(s)

HYUN ET AL.

Examiner

Brad T. Mace

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-10 and 23-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-10 and 23-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: reference "602" in Figure 6 was not mentioned in the specification. Appropriate correction is required.

Drawings

2. The drawings were received on August 13, 2004. These drawings are acceptable.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 23-27, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,307,837 (Ichikawa et al.) in view of U.S. Publication No. 2004/0077349 (Barak et al.) and in further view of U.S. Publication No. 2003/0119500 (Mukherjee et al.) and in further view of U.S. Publication No. 2002/0123365 (Thorson et al.).

Regarding claims 1, 23:

Ichikawa discloses an enterprise wireless communication system (and method), comprising:

a local area network (LAN) (Figure 1, backbone);

a plurality of wireless base stations coupled to the LAN (Figure 1, 1-6), the wireless base stations coupled to communicate with wireless devices coupled within the enterprise wireless communication system via an internet protocol (Figure 1, 1-7 and col. 7, lines 7-27, where the wireless packet network corresponds to wireless base stations 1-6 communicating (via an internet protocol) with wireless packet terminals 1-7);

a public switched data network (PSDN) gateway directly coupled to the LAN to communicate with the wireless devices through at least one of the wireless base stations (Figure 4, gateway 1-3, which corresponds to packet networks (user LANs) 1-4 (col. 7, lines 7-27)).

However, Ichikawa does not disclose expressly a switched telephone network (PSTN) gateway directly coupled to the LAN to communicate with the wireless devices through at least one of the wireless base stations.

Barak discloses a switched telephone network (PSTN) gateway directly coupled to the LAN (Figure 4, 135, 140) to communicate with the wireless devices through at least one of the wireless base stations (Figure 4, 123-125, where base stations communicate with wireless devices).

A person of ordinary skill in the art would have been motivated to employ Barak in Ichikawa in order to obtain a PSTN gateway directly coupled to a LAN. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art in which the invention pertains to combine Barak with Ichikawa (collectively Ichikawa-Barak). The suggestion/motivation to do so would have been to have the

PSTN gateway directly coupled to the LAN so that the LAN can handle the transfer of information between the PSTN gateway and the base stations (paragraph [0160]).

In addition, Ichikawa-Barak does not disclose expressly a public land mobile network (PLMN) gateway directly coupled to the LAN to communicate with the wireless devices through at least one of the wireless base stations.

Mukherjee discloses a public land mobile network (PLMN) gateway directly coupled to the LAN to communicate with a wireless device through a base station (Figure 2, 160, 150, 110, 140, 120).

A person of ordinary skill in the art would have been motivated to employ Mukherjee in Ichikawa-Barak in order to obtain a PLMN gateway directly coupled to a LAN. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art in which the invention pertains to combine Mukherjee with Ichikawa-Barak (collectively Ichikawa-Barak-Mukherjee). The suggestion/motivation to do so would have been to have the PLMN gateway directly coupled to the LAN so that the LAN can handle the transfer of information between the PLMN gateway and the base station (paragraph [0011], where the A-bis gateway directs the information to the base station).

In addition, Ichikawa-Barak-Mukherjee does not disclose expressly scalable wireless base stations. Thorson discloses a scalable wireless base station (paragraphs [0086]-[0087]).

A person of ordinary skill in the art would have been motivated to employ Thorson in Ichikawa-Barak-Mukherjee in order to obtain scalable wireless base stations.

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At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art in which the invention pertains to combine Thorson in Ichikawa-Barak-Mukherjee (collectively Ichikawa-Barak-Mukherjee-Thorson) in order to obtain the invention as specified in claim 1 and in claim 23. The suggestion/motivation to do so would have been to obtain scalable base stations so that flexible sectorization and capacity expansion can be realized (paragraph [0086]).

Regarding claims 2-5, 24-27:

Ichikawa discloses substantially all the claimed modified invention as specified above, however, does not disclose expressly wherein the scalable wireless base stations each include stackable base modules each operable to support communication with mobile terminals in a respective sectorized coverage area, wherein the stackable wireless base modules each include a transceiver coupled to receive and transmit coded communication signals to and from a remote terminal coupled to the system, wherein the stackable base modules further include a plurality of channel elements coupled to enable the base stations to handle digital communication signals to and from mobile terminals remotely coupled to the base station, and wherein the stackable base modules further include an Ethernet interface card coupled to enable the stackable base modules to handle internet protocol communication signals.

Thorson discloses wherein the scalable wireless base stations each include stackable base modules each operable to support communication with mobile terminals in a respective sectorized coverage area (paragraph [0086]-[0087]), wherein the stackable wireless base modules each include a transceiver coupled to receive and

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transmit coded communication signals to and from a remote terminal coupled to the system (paragraph [0086]), wherein the stackable base modules further include a plurality of channel elements coupled to enable the base stations to handle digital communication signals to and from mobile terminals remotely coupled to the base station (paragraph [0086]), and wherein the stackable base modules further include an Ethernet interface card coupled to enable the stackable base modules to handle internet protocol communication signals (paragraphs [0086]-[0087], backhaul network interfaces, and where a backhaul interface module supports distribution and routing of packets from the network to co-located BTS appliances (handles internet protocol communication signals)).

A person of ordinary skill in the art would have been motivated to employ Thorson in Ichikawa-Barak-Mukherjee-Thorson in order to obtain a scalable base station having stackable base modules operable to support communication with mobile terminals in a respective sectorized coverage area, where the base modules have a transceiver, a plurality of channel elements, and an Ethernet interface card. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Thorson with Ichikawa-Barak-Mukherjee-Thorson (collectively Ichikawa-Barak-Mukherjee-Thorson) in order to obtain the invention as specified in claims 1, 2, in claims 1, 2, 3, in claims 1, 2, 4, in claims 1, 2, 5, in claims 23, 24, in claims 23, 24, 25, in claims 23, 24, 26, and in claims 23, 24, 27. The suggestion/motivation to do so would have been to use connectable BTS appliances (having a transceiver, a plurality of channel elements, and a Ethernet

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interface card) in base stations so that flexible sectorization and capacity expansion can be realized (paragraph [0086]).

Regarding claim 32:

Ichikawa discloses an enterprise wireless communication system, comprising:
a plurality of base stations for wireless communication with a mobile terminal (Figure 1, 1-6, 1-7), each base station operable to communicate with a mobile terminal in a respective coverage area (Figure 1, where the first wireless packet terminal may correspond to the respective coverage area of the first wireless base station, and where the second wireless packet terminal may correspond to the respective coverage area of the second wireless base station); wherein each base station is coupled to a local area network (LAN) through an Ethernet backbone (Figure 1, wherein each wireless base station is coupled to the packet backbone (LAN), which is coupled to the user LANs);
a public switched data network (PSDN) gateway directly coupled to the LAN to communicate with the wireless devices through at least one of the wireless base stations (Figure 4, gateway 1-3, which corresponds to packet networks (user LANs) 1-4 (col. 7, lines 7-27)).

However, Ichikawa does not disclose expressly a switched telephone network (PSTN) gateway directly coupled to the LAN to communicate with the wireless devices through at least one of the wireless base stations.

Barak discloses a switched telephone network (PSTN) gateway directly coupled to the LAN (Figure 4, 135, 140) to communicate with the wireless devices through at

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least one of the wireless base stations (Figure 4, 123-125, where base stations communicate with wireless devices).

A person of ordinary skill in the art would have been motivated to employ Barak in Ichikawa in order to obtain a PSTN gateway directly coupled to a LAN. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art in which the invention pertains to combine Barak with Ichikawa (collectively Ichikawa-Barak). The suggestion/motivation to do so would have been to have the PSTN gateway directly coupled to the LAN so that the LAN can handle the transfer of information between the PSTN gateway and the base stations (paragraph [0160]).

In addition, Ichikawa-Barak does not disclose expressly a public land mobile network (PLMN) gateway directly coupled to the LAN to communicate with the wireless devices through at least one of the wireless base stations.

Mukherjee discloses a public land mobile network (PLMN) gateway directly coupled to the LAN to communicate with a wireless device through a base station (Figure 2, 160, 150, 110, 140, 120).

A person of ordinary skill in the art would have been motivated to employ Mukherjee in Ichikawa-Barak in order to obtain a PLMN gateway directly coupled to a LAN. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art in which the invention pertains to combine Mukherjee with Ichikawa-Barak (collectively Ichikawa-Barak-Mukherjee). The suggestion/motivation to do so would have been to have the PLMN gateway directly coupled to the LAN so that the LAN can handle the transfer of information between the PLMN gateway and the

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base station (paragraph [0011], where the A-bis gateway directs the information to the base station).

In addition, Ichikawa-Barak-Mukherjee does not disclose expressly each of the plurality of base stations comprising a plurality of base modules, each base module operable to communicate with the mobile terminal in a respective sector of the respective coverage area of the base station, each base module comprising: a transceiver for communicating with the mobile terminal; an Ethernet interface coupled to the LAN; and channel elements to handle digital communication signals to and from the mobile terminal.

Thorson discloses a base station comprising a plurality of base modules (paragraphs [0086]-[0087]), each base module operable to communicate with the mobile terminal in a respective sector of the respective coverage area of the base station (paragraphs [0086]-[0087]), each base module comprising: a transceiver for communicating with the mobile terminal (paragraph [0086]); an Ethernet interface coupled to the LAN (paragraph [0086]-[0087], backhaul network interfaces); and channel elements to handle digital communication signals to and from the mobile terminal (paragraph [0086]).

A person of ordinary skill in the art would have been motivated to employ Thorson in Ichikawa-Barak-Mukherjee in order to obtain base stations that can accommodate a plurality of base modules (having a transceiver, an Ethernet interface, and channel elements) to communicate with the mobile terminal in a respective sector of the respective coverage area of the base station. At the time the invention was

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made, therefore, it would have been obvious to one of ordinary skill in the art in which the invention pertains to combine Thorson in Ichikawa-Barak-Mukherjee (collectively Ichikawa-Barak-Mukherjee-Thorson) in order to obtain the invention as specified in claim 32. The suggestion/motivation to do so would have been to use connectable BTS appliances (having a transceiver, an Ethernet interface, and channel elements) in base stations so that flexible sectorization and capacity expansion can be realized (paragraph [0086]).

5. Claims 7-8, 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,307,837 (Ichikawa et al.) in view of U.S. Publication No. 2004/0077349 (Barak et al.) and in further view of U.S. Publication No. 2003/0119500 (Mukherjee et al.) and in further view of U.S. Publication No. 2002/0123365 (Thorson et al.) as applied to claim 1 above, and further in view of U.S. Patent No. 6,407,996 (Witchalls).

Regarding claims 7, 8, 28, 29:

Ichikawa discloses substantially all the claimed modified invention as specified above, however, does not disclose expressly wherein the PSTN (or PSDN) gateway includes a plurality of T1 trunks.

Witchalls discloses wherein the PSTN gateway includes a plurality of T1 trunks (Figure 8, 304 (PSTN gateway), 312, 311, and where a PSDN gateway can similarly have a plurality of T1 trunks).

A person of ordinary skill in the art would have been motivated to employ Witchalls in Ichikawa-Barak-Mukherjee-Thorson in order to obtain a PSTN (or PSDN)

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gateway to include a plurality of T1 trunks. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Witchalls with Ichikawa-Barak-Mukherjee-Thorson (collectively Ichikawa-Barak-Mukherjee-Thorson-Witchalls) in order to obtain the invention as specified in claims 1, 7, in claims 1, 8, in claims 23, 28, and in claims 23, 29. The suggestion/motivation to do so would have been to allow access (communication) between the PSTN (or PSDN) network and the PSTN (or PSDN) gateway through the use of T1 trunk lines (col. 7, lines 35-38).

6. Claims 9-10, 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,307,837 (Ichikawa et al.) in view of U.S. Publication No. 2004/0077349 (Barak et al.) and in further view of U.S. Publication No. 2003/0119500 (Mukherjee et al.) and in further view of U.S. Publication No. 2002/0123365 (Thorson et al.) as applied to claim 1 above, and further in view of U.S. Patent No. 5,600,633 (Jaisingh et al.)

Regarding claims 9, 10, 30, 31:

Ichikawa discloses substantially all the claimed modified invention as specified above, however, does not disclose expressly further including a plurality of combiners coupled to interconnect the plurality of base stations to handle communication requests from remote mobile terminals to the system and further including a plurality of splitters coupled to interconnect the plurality of base stations to handle communications requests from the base stations to remote terminals coupled to the system.

Jaisingh discloses radio systems that are interconnected through a combiner and splitter to handle communication requests to and from a wireless subscriber (Figure 4, and col. 2, lines 65-67, where the radio systems alternately share an antenna through the use of a combiner and splitter and duplexer).

A person of ordinary skill in the art would have been motivated to employ Jaisingh in Ichikawa-Barak-Mukherjee-Thorson in order to use combiners and splitters to handle communications requests to and from the mobile terminals. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Jaisingh with Ichikawa-Barak-Mukherjee-Thorson (collectively Ichikawa-Barak-Mukherjee-Thorson-Jaisingh) in order to obtain the invention as specified in claims 1, 9, in claims 1, 10, in claims 23, 30, and in claims 23, 31. The suggestion/motivation to do so would have been to have the system more efficiently handle communication requests to and from the wireless subscribers by having a plurality of radio systems alternately share an antenna through the use combiners and splitters (col. 2, lines 38-40 and col. 2, lines 65-67).

Response to Arguments

7. Applicant's arguments with respect to claims 1-5, 7-10, 23-32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brad T. Mace whose telephone number is (571) 272-3128. The examiner can normally be reached on Monday -Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

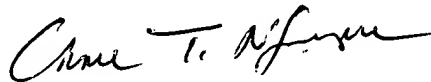
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btm

Brad T. Mace
Examiner
Art Unit 2663

btm
January 4, 2005



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